



Designing Flexible Operating Environments for Operations

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Command and Operations Center
Sub Portfolio
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Operations Centers

▼ Nerve center for Command and Control:

- Direct operations, control forces, coordinate operational activities
- Gather, process, analyze, dispatch, and disseminate planning and operational data

Maritime Operations Center (MOC)



Mission Command Center (EMCC)



Command and Operations (COMOPs) Centers

▼ Definition

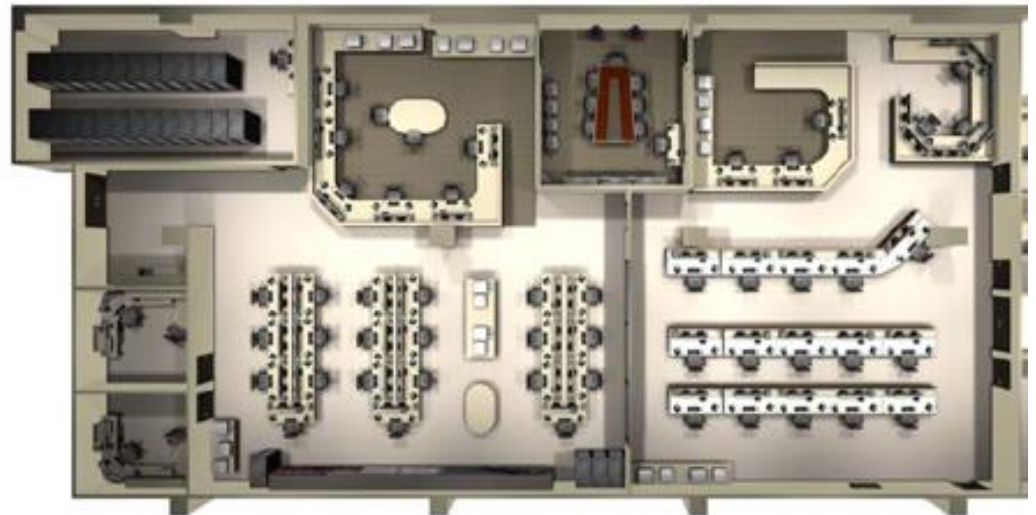
- Joint Publication 1-02, DoD Dictionary of Military and Associated Terms: “The facility or location on an installation, base, or facility used by the commander to command, control, and coordinate all operational activities.”

▼ Attributes

- Planned, designed, and built around Mission
- Convergence of Operations, Technology, and Facility

▼ Examples

- Coordination Centers
- Emergency Ops Centers
- Public Safety Ops Centers
- Security Ops Centers
- Intelligence Centers
- Network Ops Centers
- Fusion Centers



SPAWARs roles and responsibilities

- ▼ Provide System of Systems Engineering (SoSE) for Ashore Platforms
 - Overarching purpose is to integrate C5I capabilities into a Command Center Project
- ▼ Create overall integrated design and installation schedule for a Command Center
- ▼ Oversee installation of all C5I Systems and Material

COMUSNAVCENT HQ (P903-904) LESSONS LEARNED MESSAGE

April 2004

(1) THE CONSOLIDATED AND INTEGRATED PROCESS FOR MAJOR C4ISR INSTALLS WORKS. THIS PROJECT'S DEMONSTRATED SAVINGS IN COST, SCHEDULE (TIME) AND THE FINAL EXCELLENT PRODUCT DELIVERED TO THE WAR-FIGHTER MAKE THE CHOICE BETWEEN SYSTEM-BY-SYSTEM SEQUENTIAL INSTALLS OR PARALLEL INTEGRATED INSTALLS AN ISSUE THAT IS NO LONGER VALID FOR ARGUMENT – THERE IS SIMPLY NO COMPARISON IN COST-BENEFITS, SYSTEM DOWNTIME OR EXPEDIENCY IN THE WAR-FIGHTER ACHIEVING FULL MISSION READINESS BETWEEN A SYSTEM-BY-SYSTEM APPROACH AND AN INTEGRATED INSTALL.

Operationalizing the COMOPS Center

- 1** COMOPS centers can be characterized by large space, lots of empty sets, numerous comms/C2 Capabilities and some sort of “Knowledge Wall”. Knowledge wall typically displays some news source (CNN, Fox, etc.), COP(s), and Power Points slide.
- 2** How do we enable COMOPS center to be a “center of gravity for a command”?
- 3** Move COMOPS Centers from “Watch” centers and back to Operations and C2



- Integrate principles and techniques of knowledge management/business intelligence through operational analysis
- Develop Concepts of Employments (CONEMPS) documents that enable a Concept of Operations (CONOPS)
- Integrate technology priorities with operational priorities
- Design a COMOPS centers that is truly flexible to meet Operational needs
- Deploy technology that enables/enhances operations and decision superiority



End Goal: develop COMOPS center that are able to flex to differing types, or simultaneous, Operations.

Command Center Design

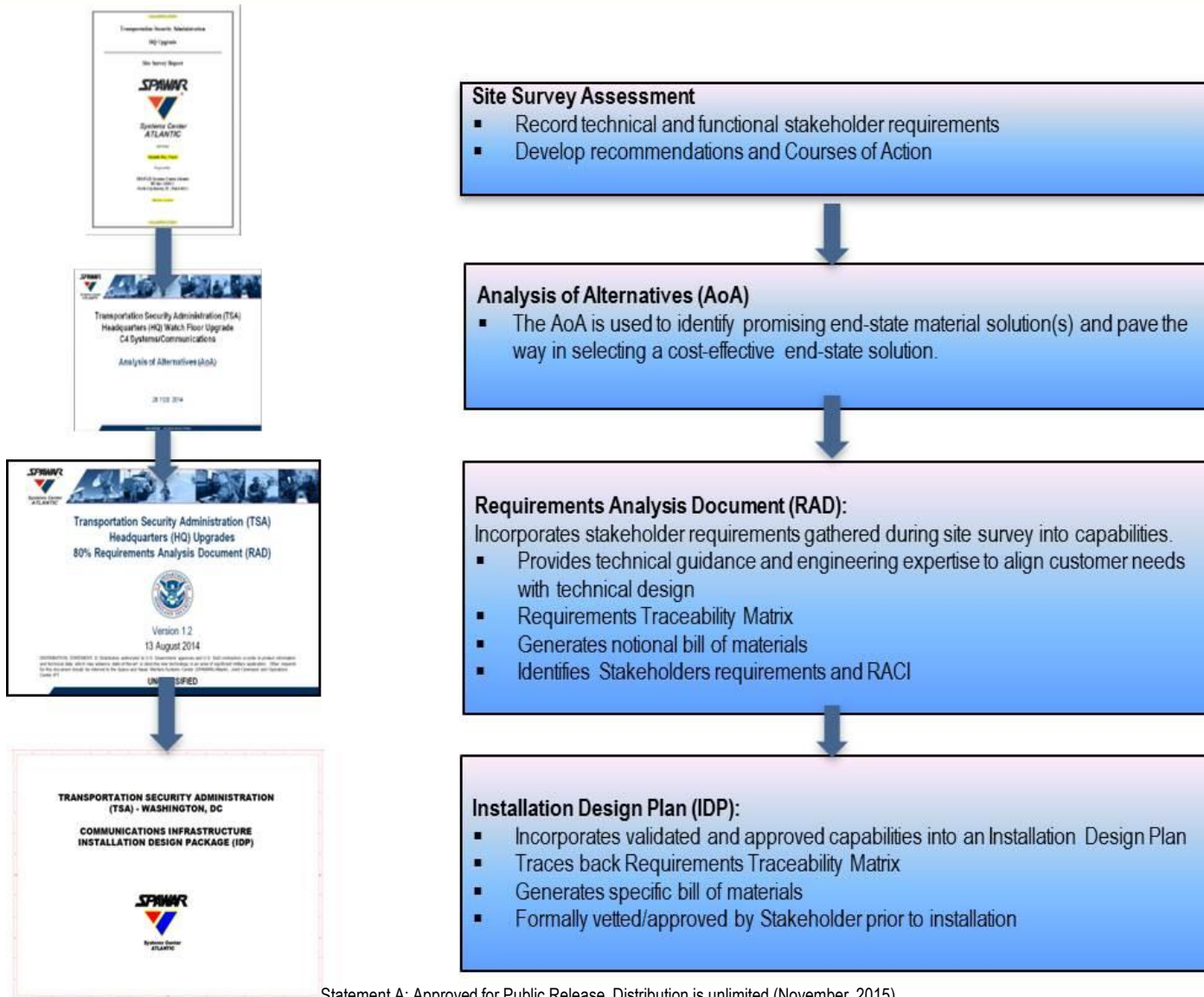
▼ Incorporate Operations into Design and Engineering

- Facilitate Operations with solution development
- Tie technical solutions to Operations – Develop an IT Concept of Employment (“CONEMP”)
- Develop solutions that allow for re-configurability and adaptability

▼ Start where the user is located to help define scope for Systems Requirements

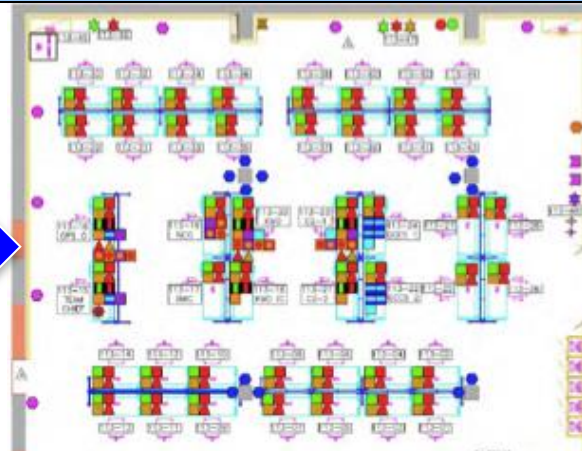
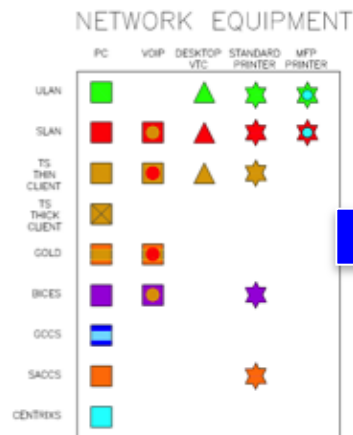
- Capturing the End User specifications and needs helps drive the overarching Systems Requirements by working backwards
 - Avoids replication, improper scaling, and omission of Systems
- Capture these specifications and needs using a “Lucky Charms” Chart
 - Helps user visualize what they will see and validate requirements

Integrated requirements documentation





Example: A Mission Command Center (EMCC) CONEMP and EMCC



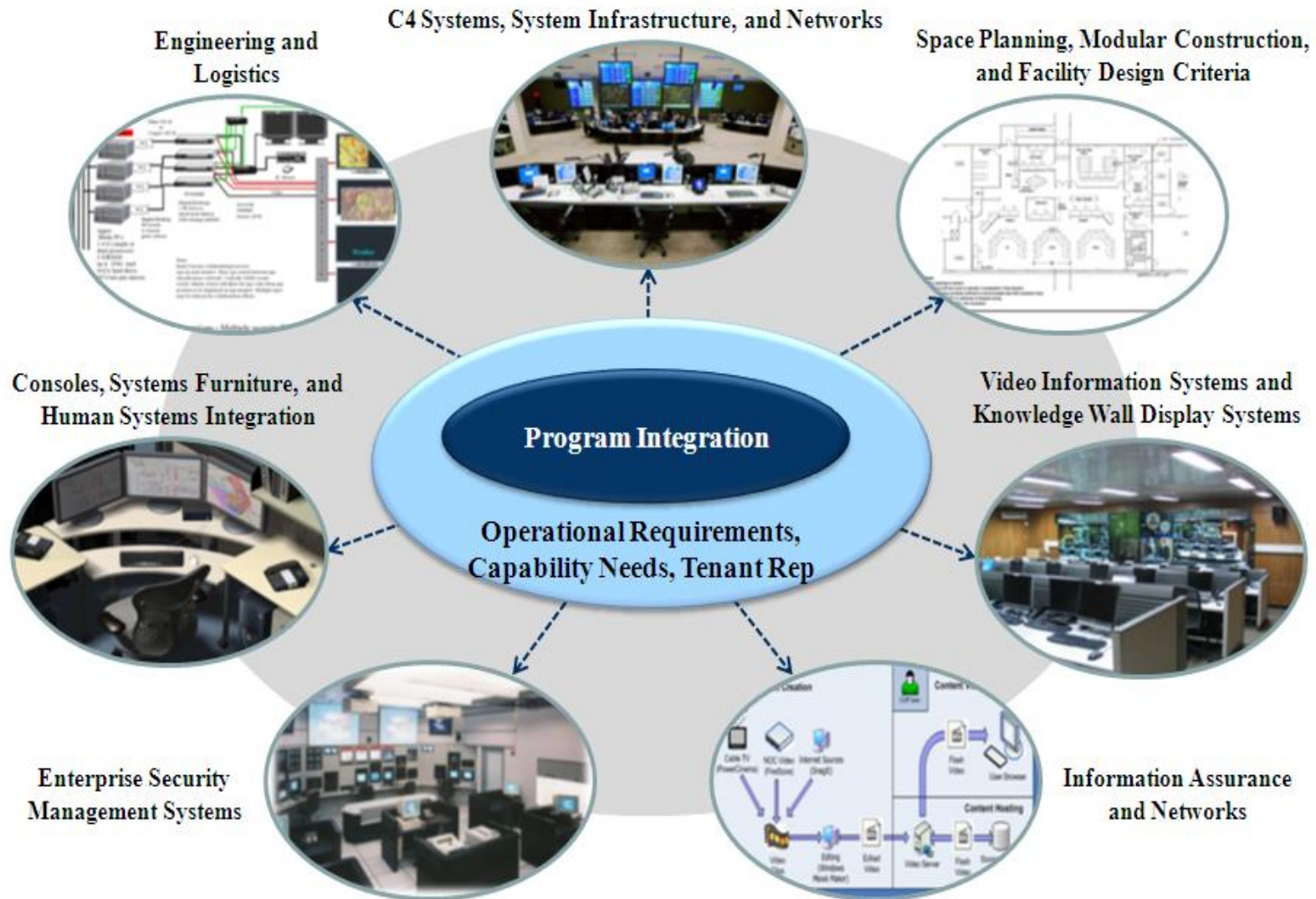
Example: A Joint Operations Center (JOC) and Lucky Charms

Industry assistance

- ▼ Reducing the “IT Sprawl” across the user workspace
- ▼ Technology enabling process improvement to reduce decision cycle time
- ▼ New industry standards focusing on physical cabling infrastructure, data center design, etc.
- ▼ Drawing repositories supporting geographically disparate teams

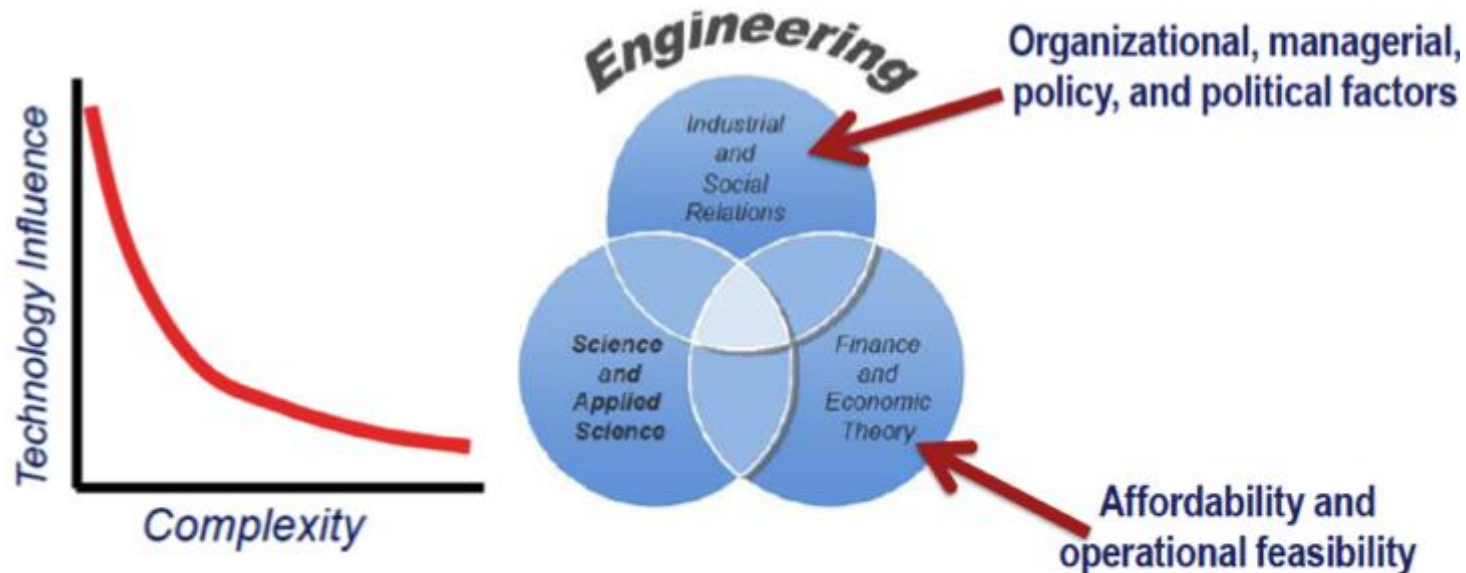


COMOPS Operational View-1 (OV-1)

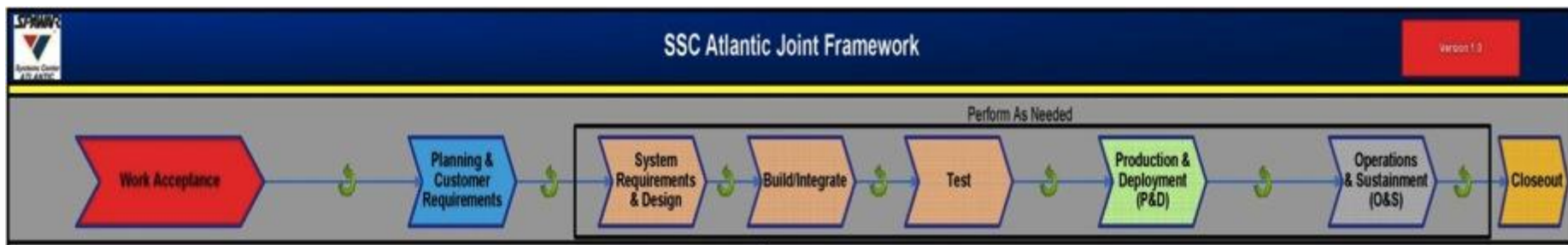


Command Center – System of Systems

- ▼ Command Centers are a System of Systems:
 - ▼ Social Architecture – people, processes, context/communications/collaboration
 - ▼ Knowledge Architecture – data and information
 - ▼ Technical Architecture – systems and services
 - ▼ Physical Architecture – facility and physical infrastructure
- ▼ Technology elements are important, but oftentimes NOT the primary factors of successful engineering



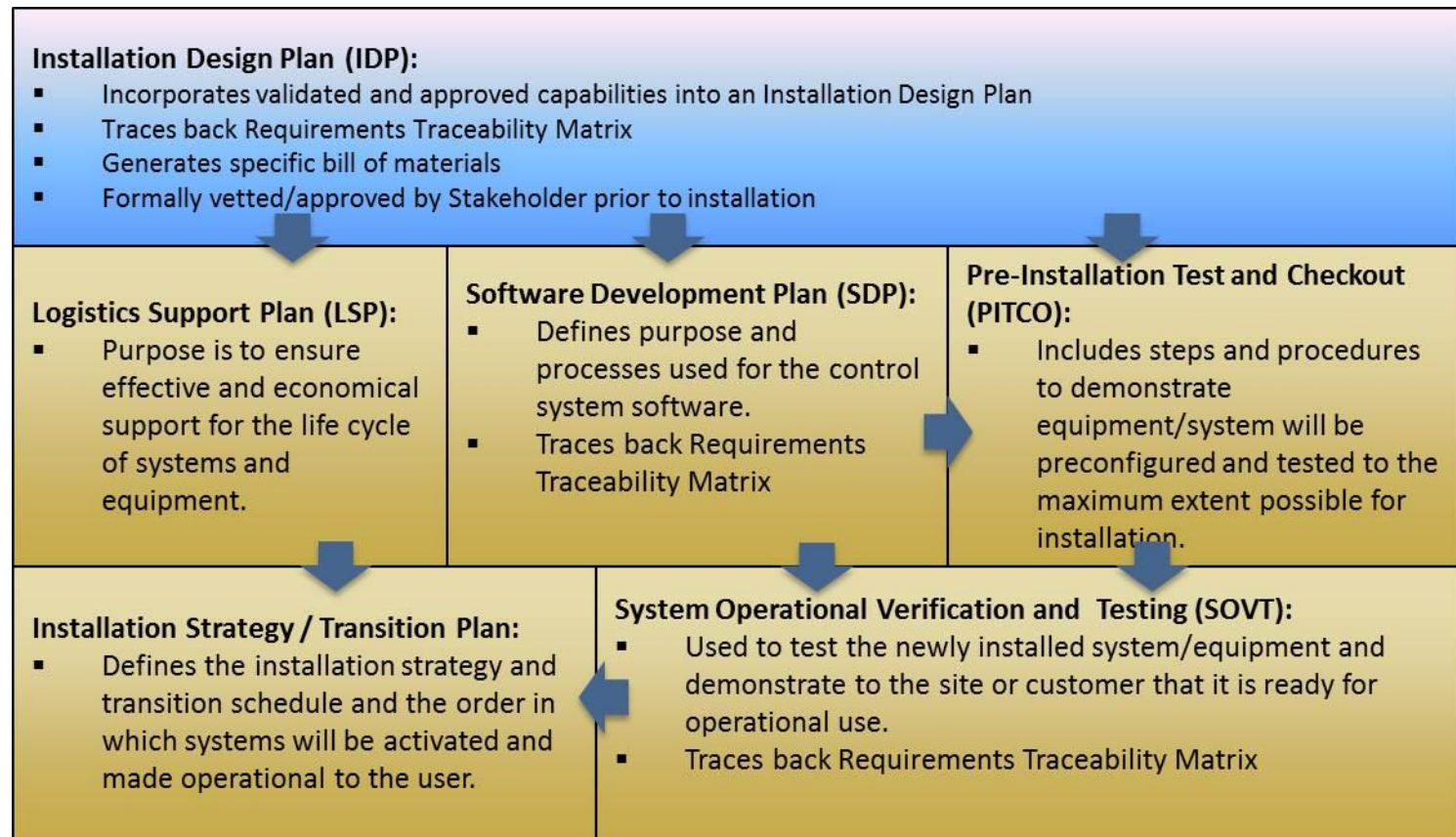
Command Center Engineering Process and the SSC-LANT Joint Framework



IMO Processes Begin

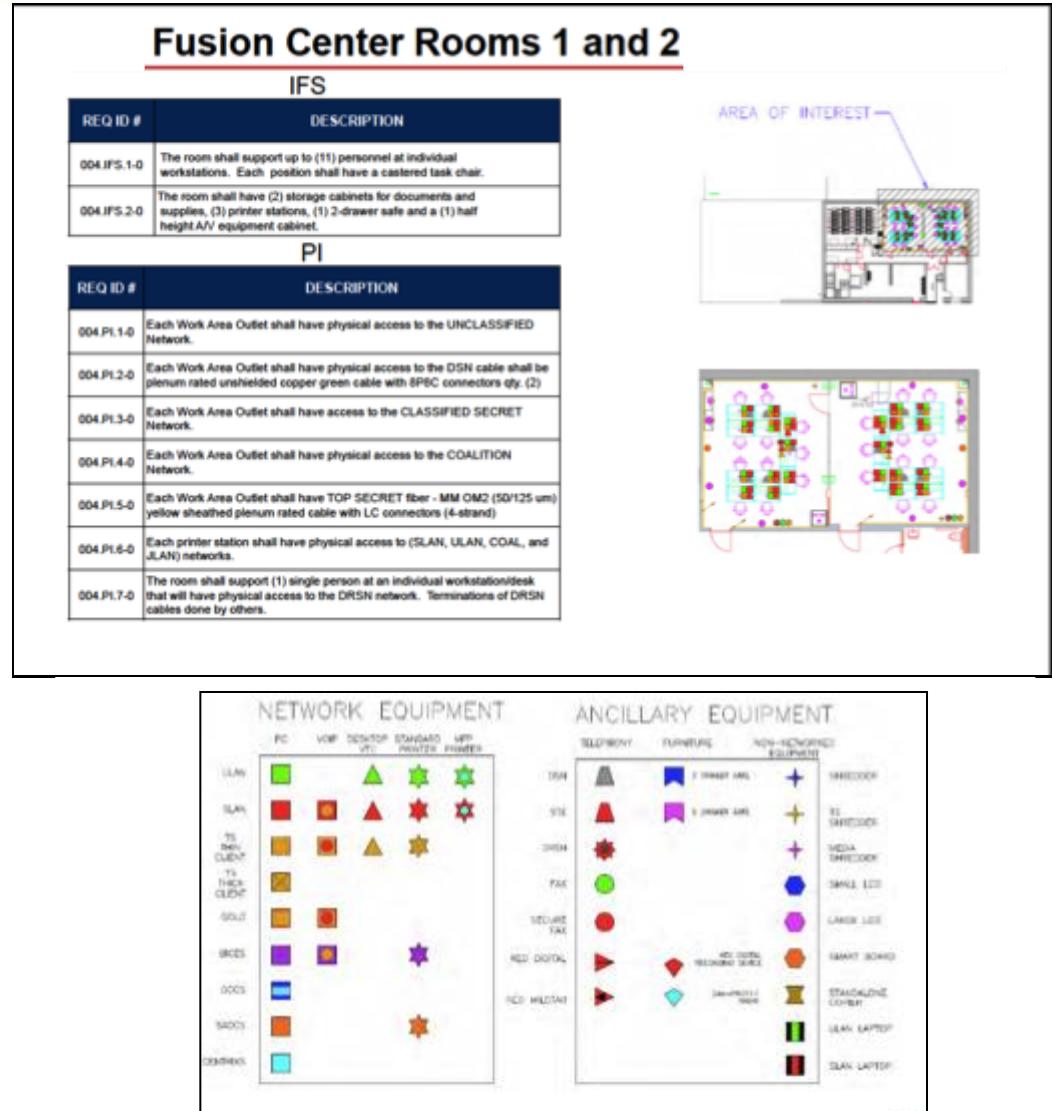
I-Project Initiation (100% Gov't FTE)	II – Reqt's (90-100% Gov't FTE)	III- Design/Engineering (65-85% Gov't FTE)	IV – Implementation (25-35% Gov't FTE)	V-Sustainment (0-25% GOV' T FTE)
Mission Alignment SPAWAR SOW P2MC	SRP RAD Integrated PMP CE/RL-WBS POA&M More...	Transition Plan Circuit Cutover Review Architectural & Engineering Drawings IDP's SOVT's Procurement Strategy More...	Install Procurement Prototyping Testing More...	ISEA

Integrated Planning and Outputs

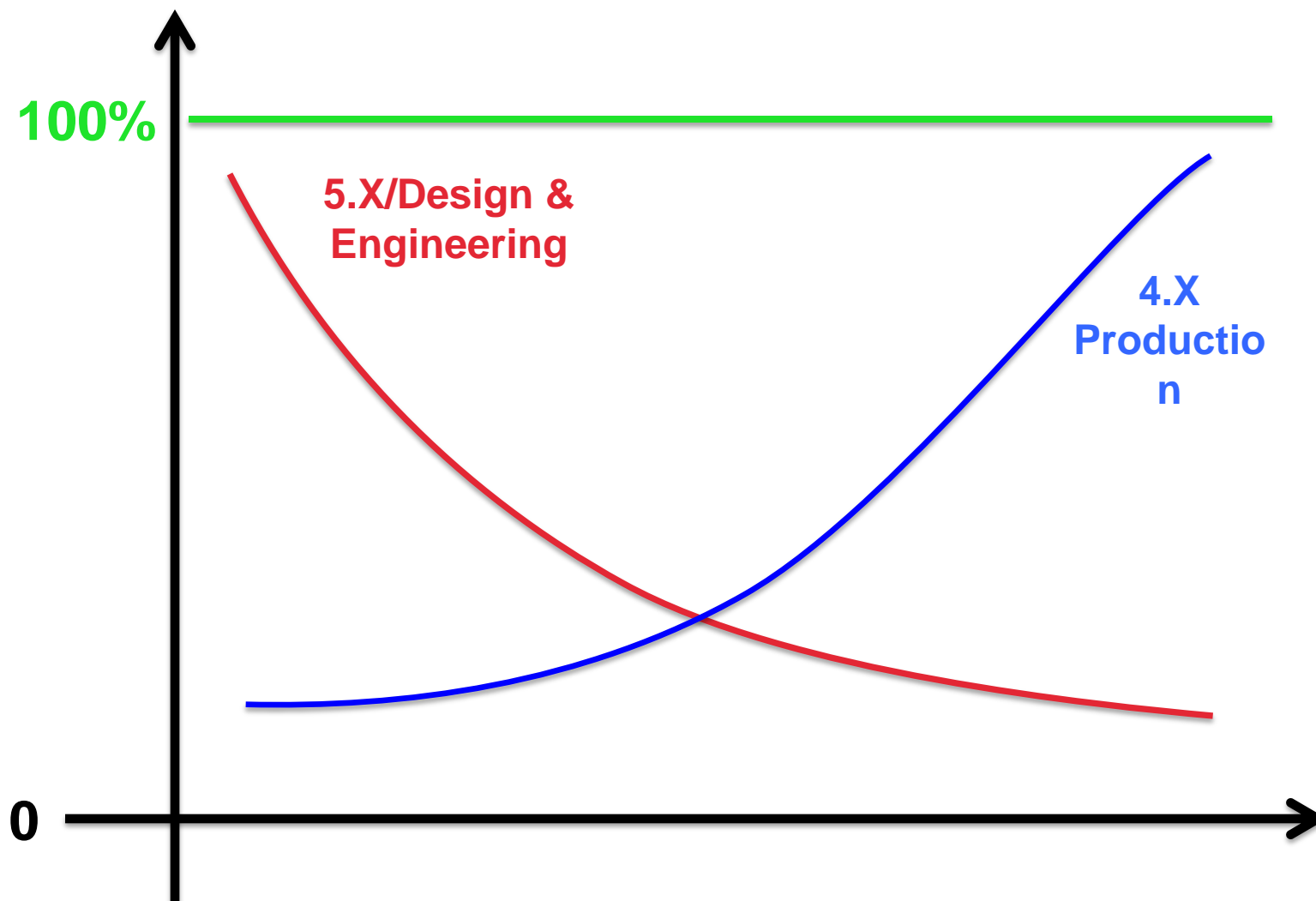


Command Centers Requirements Analysis Document (RAD)

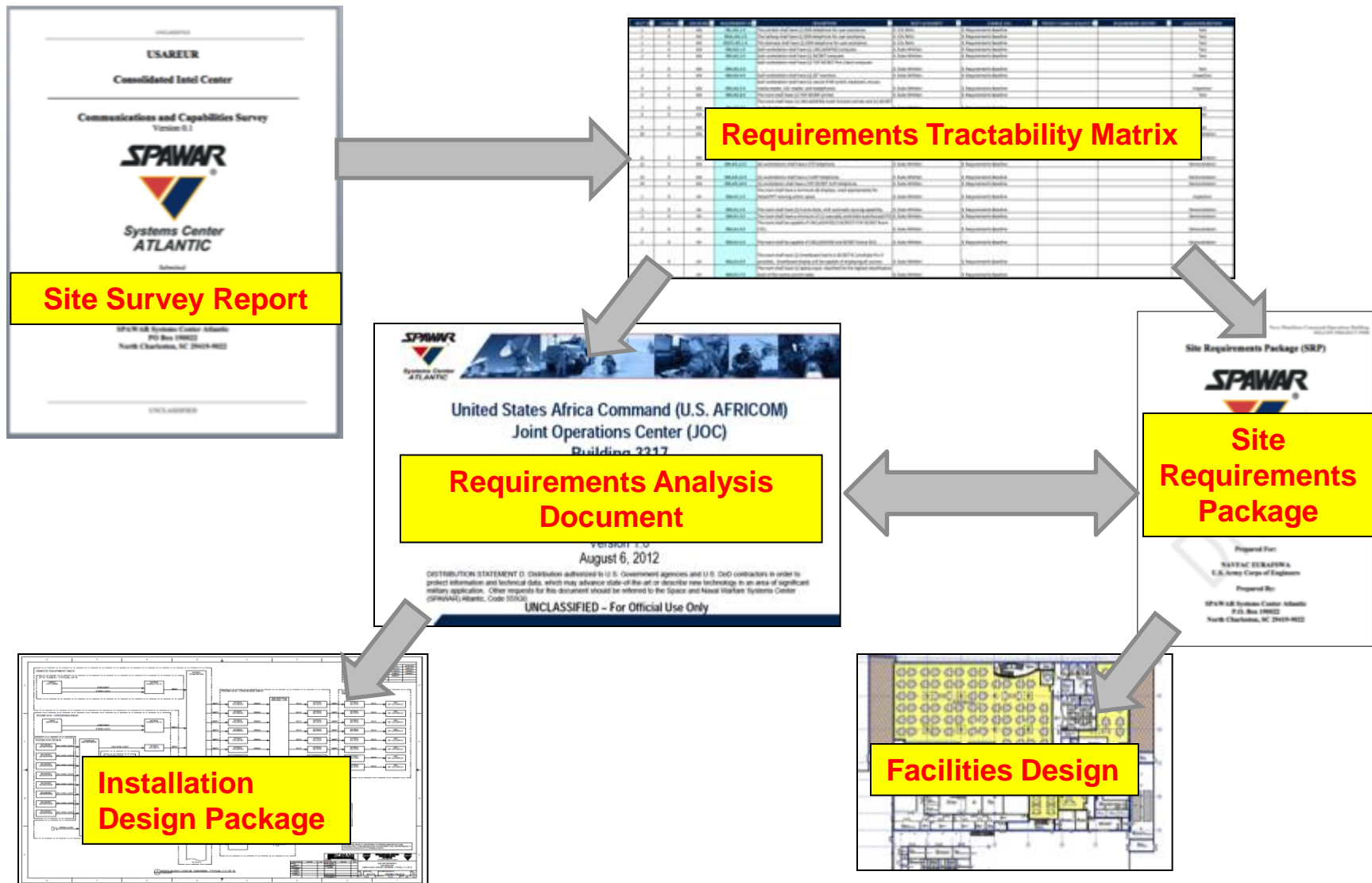
- ▼ RAD is focused towards documenting and validating end users requirements
 - Previously tracked in spreadsheet
- ▼ Major elements include:
 - RTM, Space Layouts, 3-D Models, and “Lucky-Charms” charts
 - Communications Circuits
 - Systems Requirements Document (aka “Systems List”)
- ▼ RAD intended to bridge gap b/t requirements and design
 - RAD will feed directly into IDP by providing floor plans, 20% Bill of Material, some elevations
- ▼ Provides start point for Transition Planning and Circuit Cutover



COMOPS/MILCON Project LOE



Requirements Management and Design



Statement A: Approved for Public Release. Distribution is unlimited (November 2015).

Operational Levels (JP 5-0) and Technical Attributes

National Strategic

- Number of networks and systems are proportional to the number of agencies (e.g. National Counter Terrorism Center (NCTC) has over 40+ networks)
- Numerous engineering activities involved for integration, certification and accreditation, and more.
- Outage acceptance is not acceptable
- Mostly IP based, Greater Bandwidth, and RF is minimal

Theatre Strategic

- Number of networks and systems is still proportional to number of agencies
- Numerous engineering activities involved for integration, certification and accreditation, and more.
- Outages are kept to minimal
- Mostly IP based, Greater Bandwidth, and RF is minimal

Operational

- Usually one agency and but still multiple enclaves
- Small set of engineering activities involved for integration, certification and accreditation, etc..
- Outages are tolerated
- RF presence is greater

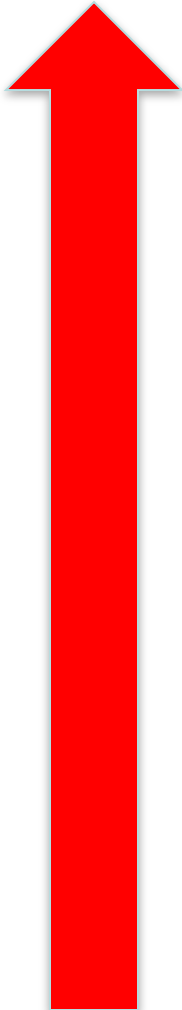
Tactical

- Minimal set of networks and systems
- Usually one engineering agency
- Least amount of systems
- Outages are expected
- RF presence is greatest

Planning Levels

General Technical Attributes

Complexity



Operational Planning Levels* of a COMOPS Center

National Strategic

- Highest level of reporting within a Department
- High Visibility; Large Mission Set
- Several different organizations present

- National Military Command Center (NMCC)
- National Operations Center (NOC)

Theatre Strategic

- Focused on a specific domain (graphical or functional)
- High Visibility; Large Mission Set

- Combatant Commander Command Centers
- TSA Operations Center (TSOC)

Operational

- Coordinates details of tactics with overarching goals of strategy
- More defined scope and mission set

- Maritime Operations Center (MOC)
- Combined Joint Task Force-Horn of Africa (JTF-HOA)

Tactical

- “Pointy end of the spear”
- Responsible for carrying out the details set forth in operational strategy

- Tactical Operations Center (TOC)
- Regional Operations Center/Regional Dispatch Center (ROC/RDC's)

Orders

Reporting

Planning Levels

Attributes

Examples

Command Center Architectures

- ▼ COMOPS Centers consist of a combination of the following architectures
 - Social
 - Functional **adjacencies** of how individuals and groups are organized within the Center
 - “The complexity of C2 in an operational environment demands pronounced interoperability between the MOC and higher operational and strategic HQ’ s, with peer organizations and mission partners, with other MOCs, and with tactical level HQ (TL HQ).” *Draft OPNAVINST 3500.04B, Maritime Operations Center (MOC) Standardization*
 - **People** who occupy, command, support, and are served by the Center
 - **Processes** by which the Center operates and conducts its mission
 - Operational **context/communications/collaboration** of entities both inside and outside of the Center
 - Knowledge
 - **Data and information** received, processed, and disseminated by the Center
 - Technical
 - The **systems and services** (equipment and technology) used to conduct the mission and operations
 - Physical
 - The actual **facility and physical infrastructure** as well as the layout of the Center